

Claims

1. An apparatus for analyzing the kinematics of golf equipment, comprising:
 - a camera system including a filter;
 - a first strobe lamp;
 - a second strobe lamp configured and adapted to provide a limited wavelength of light;
 - a club having one or more selectively positioned markers; and
 - a ball having one or more selectively positioned markers.
2. The apparatus according to claim 1, wherein said camera filter allows light between about 590 and about 610 nm to pass.
3. The apparatus according to claim 1, wherein said second strobe lamp is positioned off axis.
4. The apparatus according to claim 1, wherein said markers positioned on said club are retroreflective and said markers positioned on said ball are fluorescent.
5. The apparatus according to claim 1, wherein said second strobe lamp is filtered to achieve a limited wavelength of light.
6. The apparatus according to claim 1, wherein said second strobe lamp is a limited wavelength light source.
7. The apparatus according to claim 6, wherein said limited wavelength light source is an LED.
8. The apparatus according to claim 5, wherein said filter passes light with wavelengths between about 590 and about 610 nm.

9. The apparatus according to claim 1, wherein said first strobe is filtered to pass light between about 590 and about 610 nm and between about 460 and about 480 nm.

10. An apparatus for analyzing the kinematics of golf equipment, comprising:

a camera system including a filter;

a first strobe lamp;

a second strobe lamp;

a club having one or more selectively positioned markers;

a ball having one or more selectively positioned markers; and

wherein the camera system is configured and positioned to receive light sufficient to image the club and the ball markers when illuminated by the first strobe lamp, and wherein the camera system is configured and positioned to only receive light sufficient to image the ball markers when illuminated by the second strobe lamp.

11. The apparatus according to claim 10, wherein said camera filter allows light between about 590 and about 610 nm to pass.

12. The apparatus according to claim 10, wherein said off axis angle is between about 10 and about 20 degrees.

13. The apparatus according to claim 10, wherein said off axis angle is between about 20 and about 30 degrees.

14. The apparatus according to claim 10, wherein said markers positioned on said club are retroreflective and said markers positioned on said ball are fluorescent.

15. The apparatus according to claim 10, wherein said second strobe is configured and adapted to provide a limited wavelength of light.

16. The apparatus according to claim 10, wherein said first strobe is filtered to pass light between about 590 and about 610 nm and between about 460 and about 480 nm.

17. An apparatus for analyzing the kinematics of golf equipment, comprising:

- a camera system including a filter;
- a first strobe lamp;
- a second strobe lamp;
- a club having one or more selectively positioned retroreflective markers; and
- a ball having one or more selectively positioned fluorescent markers.

18. The apparatus according to claim 17, wherein said second strobe is off axis.

19. The apparatus according to claim 17, wherein said second strobe is configured and adapted to provide a limited wavelength.

20. The apparatus according to claim 18, wherein said off axis angle is between about 10 and about 20 degrees.

21. The apparatus according to claim 18, wherein said off axis angle is between about 20 and about 30 degrees.

22. The apparatus according to claim 17, wherein said camera system comprises at least one electronic sensor.

23. The apparatus according to claim 22, wherein said electronic sensor is a CCD.

24. An apparatus for analyzing the kinematics of golf equipment, comprising:
a camera system including a filter;
a first strobe lamp configured and adapted to selectively provide at
least a first spectrum of light and a second spectrum of light;
5 a club having one or more selectively positioned markers;
a ball having one or more selectively positioned markers; and
wherein the camera system is configured and positioned to receive
light sufficient to image the club and the ball markers when illuminated by
the first spectrum of light, and wherein the camera system is configured and
10 positioned to only receive light sufficient to image the ball markers when
illuminated by the second spectrum of light.
25. The apparatus according to claim 24, wherein the first spectrum of light comprises at
least a first and second wavelength of light.
- 15 26. The apparatus according to claim 25, wherein the second spectrum of light the second
wavelength of light.
27. The apparatus according to claim 24, wherein the first and second spectrum of light are
20 provided by a limited wavelength light source.
28. The apparatus according to claim 27, wherein the limited wavelength light source
comprises a plurality of LED's.
- 25 29. The apparatus according to claim 28, wherein the plurality of LED's comprises one of:
100 or more LED's;
200 or more LED's; and
300 or more LED's.